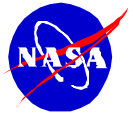




**SPACE SHUTTLE PROGRAM**  
**Space Shuttle Program Integration**  
NASA Johnson Space Center, Houston, Texas



# **STS-113 Flight Readiness Review**

**October 31, 2002**



**SPACE SHUTTLE PROGRAM**  
**Space Shuttle Program Integration**  
NASA Johnson Space Center, Houston, Texas



## Agenda

Presenter

Date **10/31/2002** Page **2**

- • **Program Integration - Flight Manager \***
  - **Key Program Considerations**
  - **Payload & System Safety**
  - **Orbital Debris Status \***
  - **Payload In-Flight Anomalies**
  - **Launch Commit Criteria**
- **Program Integration\***
  - **Waivers to Vol X**
- **System Integration TMR\***
- **Flight Readiness Statement**

**Randall Adams**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

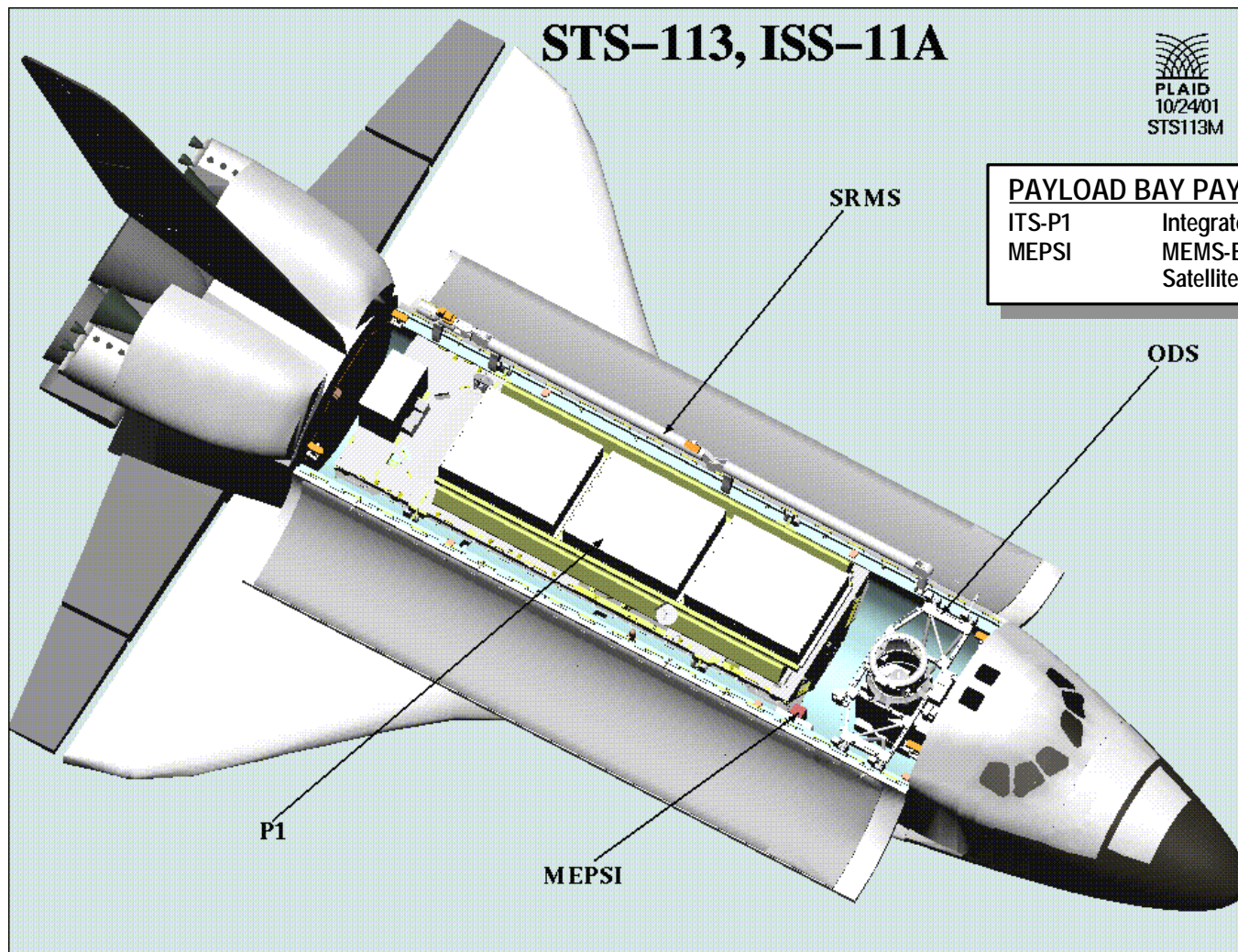
**\* Backup Material Included**



## Cargo Bay Arrangement

Presenter **Randall Adams**

Date **10/31/2002** Page **3**



### PAYLOAD BAY PAYLOADS:

ITS-P1	Integrated Truss Segment-Port 1
MEPSI	MEMS-Based PICOSAT Inspector Satellite



## Key Program Considerations

Presenter **Randall Adams**

Date **10/31/2002** Page **4**

- **Flight Design:**
  - Mission Duration: 11+1+2
  - Crew Size: 7 up / 7 down (Crew Rotation)
  - Pad Hold: +96 Hrs Margin (+48 hrs for launch after 12/3)
  - Ascent Performance Margin: 1,465 lbs.
  - Launch / Landing Time (EST): 1:21 AM (10/10/02) / 9:38 PM (10/20/02)
    - Launch Time for 10/11/02 is 12:58 EST
- **3 EVA's from ISS Airlock performed by 1 Space Shuttle EVA team**
- **Middeck Stowage**
  - Manifest finalized / L-10 Day Bench Review scheduled for 10/31/02
  - ISS Stowage Volume Ascent/Entry (Middeck Locker Equivalents): 62 / 54
  - Middeck Powered Payloads – 1 ascent / 3 descent
    - 1<sup>st</sup> flight of ISS Payload Mounting Panel (PMP) Lockers (2 for ascent)
- **Space Shuttle Secondary Payloads**
  - Micro-Electromechanical System - Based Pico Satellite Inspector (MEPSI)
    - Customer DOD (1<sup>st</sup> of 3 consecutive OV-105 flights)

**\*\* Launch/Landing Times not to be released to General Public until 24 hours prior to planned event**



## **Payload and System Safety**

Presenter	Randall Adams	
Date	10/31/2002	Page 5

- **Integrated Hazard Assessment is complete**
- **Toxicology Process**
  - Verification 1: Complete
  - Verification 2: Standard open work for late load items
- **Payload Safety Review Process**
  - No issues



# SPACE SHUTTLE PROGRAM

## Space Shuttle Program Integration

NASA Johnson Space Center, Houston, Texas



## Agenda

Presenter

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- **Program Integration - Flight Manager \***

- Key Program Considerations\*
- Payload & System Safety
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- **Flight Readiness Statement**

**Randall Adams**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**\* Backup Material Included**



**SPACE SHUTTLE PROGRAM**  
**Space Shuttle Program Integration**  
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## STS-113 Flight Readiness Statement

Presenter

Date **10/31/2002** Page **7**

**THIS CERTIFIES THAT ALL MISSION REQUIREMENTS HAVE BEEN MET AND  
SPACE SHUTTLE INTEGRATION IS READY FOR FLIGHT, PENDING COMPLETION  
OF THE DEFINED OPEN WORK AND NOTED EXCEPTION**

*/s/ original on file* *10/16/02*

**L. D. AUSTIN, JR., MANAGER  
SPACE SHUTTLE SYSTEMS INTEGRATION**

*/s/ original on file* *10/16/02*

**H. N. HAMMOND, ASSOC. PROG. MGR  
PROGRAM INTEGRATION  
UNITED SPACE ALLIANCE**

*/s/ original on file* *10/16/02*

**R. N. RICHARDS, PROGRAM DIRECTOR  
SHUTTLE & SPACE STATION INTEGRATION  
BOEING HUMAN SPACE FLIGHT &  
EXPLORATION**

*/s/ original on file* *10/16/02*

**R. ADAMS, FLIGHT MANAGER  
SPACE SHUTTLE PROGRAM INTEGRATION**

*/s/ original on file* *10/16/02*

**M. A. BREKKE, MANAGER  
SPACE SHUTTLE CUSTOMER AND  
FLIGHT INTEGRATION**

*/s/ original on file* *10/16/02*

**A. M. LARSEN, MANAGER  
PAYLOAD SAFETY**

*/s/ original on file* *10/16/02*

**R. L. SEGERT, MANAGER  
SPACE SHUTTLE KSC INTEGRATION**



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NASA Johnson Space Center, Houston, Texas



# **STS-113 Flight Readiness Review**

## **Backup Charts**



# SPACE SHUTTLE PROGRAM

## Space Shuttle Program Integration

NASA Johnson Space Center, Houston, Texas



### Agenda

Presenter

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**Randall Adams**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**No Issues**

**\* Backup Material Included**



## ISS Utilization Payloads

Presenter	Randall Adams	
Date	10/31/2002	Page 3

- Ascent Powered (1):
  - Protein Crystal Growth – Single Locker Thermal Enclosure Systems (PCG-STES) (Unit 10)
- Ascent Un-powered (4):
  - Human Research Facility (HRF)
  - Coarsening in Solid Liquid Mixture (CSLM)
  - InSpace Coil Assemblies (MSG-InSPACE)
  - Zeolite Crystal Growth (ZCG)
- Return Powered (3):
  - \*Commercial Generic Bioprocessing Apparatus (CGBA)
  - \*PCG-STES (Unit 7)
  - \*Plant Generic Bioprocessing Apparatus (PGBA)
- Return Un-Powered (2):
  - \*HRF
  - \*ZCG

\*Runway destow required.



## **STS-113 Orbital Debris Status**

Presenter **Randall Adams**

Date **10/31/2002** Page **4**

- **Orbital Debris / Micrometeroid Risk is Acceptable**

<u><b>Criteria</b></u>	<u><b>Risk</b></u>	<u><b>Guideline</b></u>
<b>Critical Penetration</b>	<b>1 in 244</b>	<b>1 in 200</b>
<b>Radiator Tube Penetration</b>	<b>1 in 253</b>	<b>1 in 61</b>
<b>Window Replacement</b>	<b>73%</b>	<b>N/A</b>



# SPACE SHUTTLE PROGRAM

## Space Shuttle Program Integration

NASA Johnson Space Center, Houston, Texas



### Agenda

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- **Program Integration - Flight Manager \***

**Randall Adams**

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**No Issues**

**No Issues**



- **Program Integration\***

**No Issues**

- **Waivers to Vol X**

**No Issues**

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**No Issues**

- **Flight Readiness Statement**

**\* Backup Material Included**



## Systems Integration

Presenter	Bob White	
Date	10/31/2002	Page 6

- **All the Systems and Cargo Integration flight preparation activities have been completed except for planned open work – no issues identified**
- **Completed tasks include:**
  - Verification of compliance with generically certified requirements
  - Mission specific analyses
  - Documentation of vehicle and cargo requirements
  - Reconfiguration / installation of Payload Integration hardware
  - Payload bay clearance assessment
- **Assessments in support of the resolution for the circuit A pyro failure are in work**

**Program Integration Is Ready to Support Flight**



# SPACE SHUTTLE PROGRAM

## Space Shuttle Program Integration

NASA Johnson Space Center, Houston, Texas



### Agenda

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- **Program Integration - Flight Manager \***

**Randall Adams**

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- **Launch Commit Criteria**

**No Issues**

- **Program Integration\***

**No Issues**

- **Waivers to Vol X**

**No Issues**

➡ • **System Integration TMR\***

**No Issues**

**No Issues**

- **Flight Readiness Statement**

**No Issues**

**\* Backup Material Included**



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## Integration CoFR Flight Product Status

Presenter

Date **10/31/2002** Page **8**

### Cargo Integration

Last Updated: 10/29/02

STS-112	STS-113	STS-107	STS-114	STS-115	STS-116	STS-117	STS-118
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### System Integration

STS-112	STS-113	STS-107	STS-114
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**GREEN:** Primary and backup personnel in place to produce required products, or required products have been produced



**YELLOW:** Single string exists for required products



**RED:** Neither primary nor backup personnel in place for required products

- Yellow rating due to single string post-flight data acquisition / processing
  - ◆ STS-107